
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Water Right Acquisition Program (Multi-Year Fy 2000-2002)

BPA project number: 20035

Contract renewal date (mm/yyyy): ☐ Multiple actions?

Business name of agency, institution or organization requesting funding

Oregon Water Trust

Business acronym (if appropriate) OWT

Proposal contact person or principal investigator:

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NPPC Program Measure Number(s) which this project addresses

7.6D (Habitat Objectives); 7.8G.1 and 7.8G.2 (Instream Flow Protection for Salmon and Steelhead); 7.8H (Water Conservation).

FWS/NMFS Biological Opinion Number(s) which this project addresses

None.

Other planning document references

Wy-KAN-USH-MI WA-KISH-WIT, The Columbia River Anadromous Fish Restoration Plan of the Nez-Perce, Umatilla, Warm Springs and Yakama Tribes, 1995; Return to the River, 1996; John Day River Subbasin Salmon and Steelhead Production Plan, 1990; Deschutes River Subbasin Salmon and Steelhead Production Plan, 1990; Draft Lower Deschutes River Subbasin Fish Management Plan, 1996; Buck Hollow Watershed Plan and Environmental Assessment, 1994; Upper Deschutes River Subbasin Fish Management Plan, 1990; Squaw (Why-chus) Creek Watershed Assessment, 1994; Fifteenmile Creek Subbasin Salmon and Steelhead Production Plan, 1990; Fifteenmile Watershed Enhancement Action Plan, 1997; Fifteenmile Basin Fish Habitat Improvement Implementation Plan, 1987; Umatilla River Subbasin Salmon and Steelhead Production Plan, 1990; Walla Walla River Subbasin Salmon and Steelhead

Production Plan, 1990; Watershed Assessment Upper Walla Walla River Subbasin, 1997; Walla Walla Basin Council Brochure, 1998.

Short description

Acquire existing consumptive water rights from willing sellers and transfer to legally protected instream water rights to increase streamflows and restore salmonid habitat and water quality. Work with agencies to monitor and protect instream rights.

Target species

Wild spring chinook, summer and winter steelhead, redband trout, bull trout.

Section 2. Sorting and evaluation

Subbasin

John Day, Deschutes, Fifteenmile, Umatilla, Walla Walla

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input checked="" type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1994	4 water right acquisitions (statewide); total flow acquired 1.84 cfs; protected 3.8 river miles. [1 acquisition in Project subbasins.]	Benefited steelhead, coho, chinook habitat (Deschutes, Rogue Subbasins)
1995	10 water right acquisitions (statewide) total flow acquired 8.25-10.81 cfs protected 29.6 river miles. [3 acquisitions in Project subbasins.]	Benefited steelhead, coho, chinook, cutthroat trout habitat (Deschutes, Hood, John Day and Rogue Subbasins)
1996	25 water right acquisitions (statewide); total flow acquired 20.33-22.72 cfs; protected 254 river miles. [12 acquisitions in Project subbasins.]	Benefited steelhead, coho, chinook, and cutthroat, redband, and rainbow trout habitat (Deschutes, Hood, John Day, Umatilla, Grande Ronde, and Rogue Subbasins)
1997	27 water right acquisitions (statewide); total flow acquired 19.70-21.30 cfs; protected 271 river miles. [11 acquisitions in Project subbasins.]	Benefited steelhead, coho, chinook, and cutthroat, redband, rainbow and brown trout (Deschutes, Hood, John Day, Umatilla, Grande Ronde and Rogue Subbasins)
1998	31 water right acquisitions (statewide); total flow acquired 21.42-23.03 cfs; protected 288 river miles. [11 acquisitions in Project subbasins.]	Benefited steelhead, coho, chinook, and cutthroat, redband, rainbow and brown trout (Deschutes, Hood, John Day, Umatilla, Grande Ronde, Rogue, Umpqua and Willamette Subbasins)

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	John Day Subbasin: Tributaries of the Middle Fork John Day, including Big, Camp, Vincent, Davis, Vinegar, Bridge Creeks: Acquire 2 cfs total from 2-3 landowners (\$100,000).	a	Identifying and Prioritizing (meets Objectives 1-4 for John Day Subbasin): Assess opportunities on existing priority streams and identify and prioritize new streams based on fish use, habitat and flow conditions and type and location of water rights.

2	John Day Subbasin: Muddy Creek; Acquire at least 1.5 of the 3.1 cfs total water right (\$75,000)	b	Evaluating Acquisition Opportunities (Objectives 1-4): Evaluate ecological benefits and economic value of acquisition opportunities based on priority date, flow rate, location, current irrigation activities and property values.
3	John Day Subbasin: Service Creek; Acquire one of two active rights 0.2 cfs (\$10,000)	c	Negotiating and Transferring Water Rights (Objectives 1-4): Negotiate private agreement with landowners; transfer water rights through state process.
4	John Day Subbasin: Fields/Fox Creeks; Cultivate acquisition opportunities (see methods).	d	Public Education and Outreach (Objectives 1-4): Ongoing contact with water rights holders; work with N.F. John Day Watershed Council, Wheeler, Grant and Monument SWCDs, and local, state, federal and tribal agencies and groups to disseminate information.
		e	Instream Water Right Monitoring and Protection (Objectives 1-4): Develop monitoring plan for each instream water right; coordinate protection efforts with watermaster; conduct site visits.
		f	Monitoring and Evaluating Success (Objectives 1-4): Gather and evaluate flow, habitat and water quality data and summarize results. Work with state, federal and tribal agency staff to identify cooperative monitoring projects.
5	Deschutes Subbasin: Buck Hollow Creek; Permanently acquire entire 1.0 cfs (\$50,000)	a	Identifying and Prioritizing (meets Objectives 5-8 Deschutes Subbasin): Assess opportunities on existing priority streams and identify and prioritize new streams based on fish use, habitat and flow conditions and type and location of water rights.
6	Deschutes Subbasin: Trout Creek; Acquire 1.5 cfs from 2-3 landowners (\$75,000)	b	Evaluating Acquisition Opportunities (Objectives 5-8): Evaluate ecological benefits and economic value of acquisition opportunities based on priority date, flow rate, location, current irrigation

			activities and property values.
7	Deschutes Subbasin: Tygh/Badger Creeks; Permanently acquire 0.5 cfs from 1 or 2 landowners (\$25,000)	c	Negotiating and Transferring Water Rights (Objectives 5-8): Negotiate private agreement with landowners; transfer water rights through state process.
8	Deschutes Subbasin: Squaw Creek; Permanently acquire an additional 2.5 cfs from 5 landowners (\$125,000)	d	Public Education and Outreach (Objectives 5-8): Ongoing contact with water right holders; coordinate with Trout Creek and Deschutes County Watershed Councils, Wasco, Jefferson and Deschutes SWCDs and agencies and organizations to disseminate information.
		e	Instream Water Right Monitoring and Protection (Objectives 5-8): Develop monitoring plan for each instream water right; coordinate protection efforts with watermaster; conduct site visits.
		f	Monitoring and Evaluating success (Objectives 5-8): Gather and evaluate flow, habitat and water quality data and summarize results. Work with state, federal and tribal agency staff to identify cooperative monitoring projects.
9	Fifteenmile Subbasin: Fifteenmile and Eightmile Creeks; Permanently acquire an additional 2 cfs from 3 landowners (\$100,000)	a	Identifying and Prioritizing (Objective 9): Assess acquisition opportunities on existing priority streams and identify and prioritize new streams based on fish use, habitat and flow conditions and type and location of water rights.
		b	Evaluating Acquisition Opportunities (Objective 9): Evaluate ecological benefits and economic value of acquisition opportunities based on priority date, flow rate, location, current irrigation activities and property values.
		c	Negotiating and Transferring Water Rights (Objective 9): Negotiate private agreement with landowners; transfer water rights through state process.

		d	Public Education and Outreach (Objective 9): Ongoing contact with individual water right holders; coordinate with Fifteenmile Watershed Council, Wasco SWCD and local, state, federal and tribal agencies and organizations to disseminate information.
		e	Instream Water Right Monitoring and Protection (Objective 9): Develop monitoring plan for each instream water right; coordinate protection efforts with watermaster; conduct site visits.
		f	Monitoring and Evaluating Success (Objective 9): Gather and evaluate flow, habitat and water quality data and summarize results. Work with state, federal and tribal agency staff to identify cooperative monitoring projects.
10	Umatilla Subbasin: East and West Birch Creeks; Acquire 1 cfs from 2 landowners (\$50,000)	a	Identifying and Prioritizing (Objective 10): Assess acquisition opportunities on existing priority streams.
		b	Evaluating Acquisition Opportunities (Objective 10): Evaluate ecological benefits and economic value of acquisition opportunities based on priority date, flow rate, location, current irrigation activities and property values.
		c	Negotiating and Transferring Water Rights (Objective 10): Negotiate private agreement with landowners; transfer water rights through state process.
		d	Public Education and Outreach (Objective 10): Ongoing contact with individual water right holders; coordinate with Umatilla Basin Watershed Council, Umatilla and Morrow SWCDs, and agencies and organizations to disseminate information.
		e	Instream Water Right Monitoring

			and Protection (Objective 10): Develop monitoring plan for each instream water right; coordinate protection efforts with watermaster; conduct site visits.
		f	Monitoring and Evaluating Success (Objective 10): Gather and evaluate flow, habitat and water quality data and summarize results. Work with state, federal and tribal agency staff to identify cooperative monitoring projects.
11	Walla Walla Subbasin: North Fork Walla Walla: Acquire 0.5 cfs from 1 landowner (\$25,000)	a	Identifying and Prioritizing (Objective 11): Assess acquisition opportunities on existing priority stream.
		b	Evaluating Acquisition Opportunities (Objective 11): Evaluate ecological benefits and economic value of acquisition opportunities based on priority date, flow rate, location, current irrigation activities and property values.
		c	Negotiating and Transferring Water Rights (Objective 11): Negotiate private agreement with landowner; transfer water right through state process.
		d	Public Education and Outreach (Objective 11): Ongoing contact with individual water right holders. Work with Walla Walla Watershed Council, Umatilla SWCD and local, state, federal and tribal agencies and organizations to disseminate information.
		e	Instream Water Right Monitoring and Protection (Objective 11): Develop monitoring plan for instream water right; coordinate protection efforts with watermaster; conduct site visits.
		f	Monitoring and Evaluating Success: Gather and evaluate flow, habitat and water quality data and summarize results. Work with state,

			federal and tribal agency staff to identify cooperative monitoring projects.
12	Throughout Oregon portion of Columbia Basin: New priority streams: Acquire a total of 1 cfs from new priority streams (\$50,000)	a	Identifying and Prioritizing (meets Objective 12): Work with ODFW, OWRD and Tribal Governments to identify and prioritize new streams based on fish use, habitat and flow conditions and type and location of water right.
13	Throughout Oregon portion of Columbia Basin: Other streams with flow limitations: Acquire a total of 1 cfs from non-target streams (\$50,000)	b	Evaluating Acquisition Opportunities (Objectives 12 & 13): Evaluate ecological benefits and economic value of acquisition opportunities based on priority date, flow rate, location, current irrigation activities and property values.
		c	Negotiating and Transferring Water Rights (Objectives 12 & 13): Negotiate private agreement with landowner(s); transfer water right(s) through state process.
		d	Public Education and Outreach (Objectives 12 & 13): Contact statewide landowner organizations, visit watershed councils, send literature to agencies and utilize media such as newspapers, radio.
		e	Instream Water Right Monitoring and Protection (Objectives 12 & 13): Develop monitoring plan for instream water right(s); coordinate protection efforts with watermaster; conduct site visits.
		f	Monitoring and Evaluating Success (Objectives 12 & 13): Gather and evaluate flow, habitat and water quality data and summarize results. Work with state, federal and tribal agency staff to identify cooperative monitoring projects.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	10/1999	9/2002	John Day - Tribs of Middle Fork: wild spring chinook, summer steelhead, and bull trout	2.0 cfs	14.00%
2	10/1999	9/2002	John Day - Muddy Creek: wild summer steelhead	1.5 cfs	10.00%
3	10/1999	9/2002	John Day - Service Creek: wild summer steelhead	0.2 cfs	1.00%
4	10/1999	9/2002	John Day - Fields/Fox Creek: wild summer steelhead		0.00%
5	10/1999	9/2002	Deschutes - Buck Hollow Creek: wild summer steelhead	1.0 cfs	7.00%
6	10/1999	9/2002	Deschutes - Trout Creek: wild summer steelhead	1.5 cfs	10.00%
7	10/1999	9/2002	Deschutes - Tygh/Badger Creeks: reband trout	0.5 cfs	3.00%
8	10/1999	9/2002	Deschutes - Squaw Creek: reband and bull trout, potentially chinook and steelhead	2.5 cfs	17.00%
9	10/1999	9/2002	Fifteenmile - Fifteenmile and Eightmile Creeks: wild winter steelhead	2.0 cfs	14.00%
10	10/1999	9/2002	Umatilla - East and West Birch Creeks: wild summer steelhead	1.0 cfs	7.00%
11	10/1999	9/2002	Walla Walla - North Fork Walla Walla: wild	0.5 cfs	3.00%

			summer steelhead		
12	10/1999	9/2002	New Priority Streams: chinook and steelhead	1.0 cfs	7.00%
13	10/1999	9/2002	Other Streams with flow limitations: chinook and steelhead	1.0 cfs	7.00%
				Total	100.00%

Schedule constraints

The water right acquisition process depends on: 1) negotiating with the water right holder, and 2) obtaining approval from the Oregon Water Resources Department for transfer to instream use. Time required varies with each acquisition.

Completion date

9/2002

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		% 16	20,500
Fringe benefits	Estimated at %3.9 of Personnel Costs	% 1	800
Supplies, materials, non- expendable property		% 0	580
Operations & maintenance		% 1	960
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Two-thirds of projected funds needed to complete acquisitions in FY 2000	% 77	100,000
NEPA costs		% 0	
Construction-related support		% 0	
PIT tags	# of tags:	% 0	
Travel	Travel throughout subbasins related to acquiring and monitoring instream water rights	% 2	2,000
Indirect costs	Overhead at 10% of \$41,840 in Operational Costs	% 3	4,160
Subcontractor	Certified Water Rights Examiners	% 1	1,000
Other		% 0	

TOTAL BPA FY2000 BUDGET REQUEST	\$130,000
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Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Oregon Water Resources Department	Project identification, evaluation and monitoring by Watermasters and WRD staff	% 1	2,000
Oregon Department of Fish and Wildlife	Project identification, evaluation and monitoring by district fish biologists	% 1	2,000
National Fish and Wildlife Foundation, Bullitt Foundation and Compton Foundation	Operation Funding	% 8	16,000
Governor's Watershed Enhancement Board	Acquisition Funding	% 14	27,000
National Fish and Wildlife Foundation	Acquisition Funding	% 5	10,000
Local Governments	Acquisition Funding	% 4	7,000
Portland General Electric	Acquisition Funding	% 3	5,000
Private Donations	Acquisition Funding	% 1	1,000
Total project cost (including BPA portion)			\$200,000

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$255,000	\$310,000		

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Williams, R.N., L.D. Calvin, C.C. Coutant and others. 1996. Return to the River, Restoration of Salmonid Fishes in the Columbia River Ecosystem. Independent Science Group.
<input type="checkbox"/>	Columbia River Inter-Tribal Fish Commission. 1996. WY-KAN-USH-MI WA-KISH-WIT, Spirit of the Salmon, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes. CRITFC, Portland, OR.
<input type="checkbox"/>	Nehlsen, W., J.E. Williams and J.A. Lichatowich. 1991. Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho and

	Washington. Fisheries 16:4-21.
<input type="checkbox"/>	Oregon Department of Fish and Wildlife, CTUIR and CTWSRO. 1990. John Day River Subbasin Salmon and Steelhead Production Plan. Northwest Power Planning Council, Portland, OR.
<input type="checkbox"/>	Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon. 1990. Deschutes River Subbasin Salmon and Steelhead Production Plan. Northwest Power Planning Council, Portland, OR.
<input type="checkbox"/>	Oregon Department of Fish and Wildlife. 1996. Draft Lower Deschutes River Subbasin Fish Management Plan. Mid Columbia Fish District, The Dalles, OR.
<input checked="" type="checkbox"/>	USDA-SCS. 1994. Buck Hollow Watershed Plan and Environmental Assessment Sherman and Wasco Counties. USDA, Washington, D.C.
<input type="checkbox"/>	Oregon Department of Fish and Wildlife. 1996. Upper Deschutes River Subbasin Fish Management Plan. Upper Dischutes River Fish District, Bend, OR.
<input checked="" type="checkbox"/>	Curtis, Jan. 1994. Squaw (Why-chus) Creek Watershed Assessment. Deschutes Soil and Water Conservation District, Bend, Oregon.
<input type="checkbox"/>	Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon. 1990. Fifteenmile Creek Subbasin Salmon and Steelhead Production Plan. Northwest Power Planning Council, Portland, OR.
<input checked="" type="checkbox"/>	Smith, R., J. Newton, R. Boyce and others. 1987. Fifteenmile Basin Fish Habitat Improvement Plan. ODFW and USDA-FS, The Dalles, OR.
<input checked="" type="checkbox"/>	Fifteenmile Creek Watershed Council. 1997. Fifteenmile Watershed Enhancement Action Plan. Wasco County Soil and Water Conservation District, The Dalles, OR.
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish and Wildlife. 1990. Umatilla River Subbasin Salmon and Steelhead Production Plan. Northwest Power Planning Council, Portland, OR.
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish and Wildlife. 1990. Walla Walla River Subbasin Salmon and Steelhead Production Plan. Northwest Power Planning Council, Portland, OR.
<input checked="" type="checkbox"/>	Walla Walla Basin Watershed Council. 1997. Watershed Assessment Upper Walla Walla River Subbasin, Umatilla County, OR. U.S. Bureau of Reclamation, Yakima, WA. and Boise, ID.
<input type="checkbox"/>	Landry, C. 1995. Giving Color to Oregon's Gray Water Market: An Analysis of Price Determinants for Water Rights. Master's Thesis, Oregon State University, Corvallis, OR.
<input type="checkbox"/>	Washington Forest Practice Board. 1992. Standard Methodology for Conducting Watershed Analysis. Vol 1.10.
<input type="checkbox"/>	Bovee, K.D. 1982. A Guide to Stream Habitat Analysis Using the Instream Flow Incremental Methodology. Instream Flow Information Paper 12. FWS/OBS-82/26. U.S. Fish and Wildlife Service, Washington D.C.

PART II - NARRATIVE

Section 7. Abstract

The Oregon Water Trust is requesting \$500,000 in multi-year funding (FY 2000-2002) for its Water Right Acquisition Program in select subbasins. The funding will help pay for water right acquisitions on targeted streams and help support the staff work needed to acquire and protect senior instream water rights.

The objectives of the project are to improve the quantity and quality of habitat for anadromous and resident fish by acquiring consumptive water rights for conversion to instream use. The project addresses The Northwest Power Planning Council's Fish and Wildlife Program habitat objective 7.6D by implementing program measures 7.8G1 and 7.8G2.

The project targets important spawning and rearing tributaries where streamflow is a limiting factor, and where irrigation withdrawals have impacted fish production and survival. OWT and its partners have identified specific streams in the John Day, Deschutes, Fifteenmile, Umatilla and Walla Walla Subbasins, and OWT has set goals for instream water right acquisitions during the project timeframe. The project will create senior instream water rights which can be protected from removal by junior water right holders through a designated stream reach. OWT uses a science-based methodology to evaluate each acquisition opportunity for potential ecological benefit and economic value. OWT and its partners conduct an ongoing measuring and monitoring program to protect these instream rights and evaluate ecological benefits.

The outcome of this project, represented by successfully negotiated acquisitions, will be "wet water" that will directly benefit fish species in targeted Oregon tributaries to the Columbia River.

Section 8. Project description

a. Technical and/or scientific background

The rivers and streams within the Oregon portion of the Columbia River Basin provide important spawning and rearing habitat for anadromous and resident fish. Over the past 150 years, populations of salmon and trout have declined markedly from their historical abundance and distribution. A number of stocks have become extinct, and many others are at risk of extinction (Nehlsen, 1991). Along with a variety of other impacts, reduction in available spawning and rearing habitat has been identified as a major factor impacting fish production and survival. One factor contributing to reduced habitat is inadequate instream flows. Instream flows influence habitat conditions such as pool size and frequency, flow depth and velocity, and temperature and dissolved oxygen levels. During the summer rearing period, many streams in Oregon suffer from extreme

low flow conditions due to both natural processes and irrigation withdrawal. Numerous reports and documents have identified inadequate instream flows as a factor for decline of anadromous and resident fish in the Columbia Basin (Williams et al., 1996; Columbia River Intertribal Fish Commission, 1996).

Funding of OWT's Water Right Acquisition Program is needed to address a fundamental limiting factor for fish habitat throughout the region - inadequate flows in small streams and tributaries that provide crucial habitat for anadromous and resident fish. The Fish and Wildlife Program (FWP) recognizes the importance of water quantity and quality as components of watershed habitat objectives (FWP 7.6D), and specifies water right acquisitions as one program measure to accomplish these objectives (FWP 7.8G1). OWT's water right acquisition program uses the legal mechanism of purchasing existing water rights from willing sellers and converting those rights to legally protected instream water rights.

Water law in Oregon and the arid western states is based on the doctrine of prior appropriation, commonly called "first in time, first in right." The first person to appropriate water by taking it out of a stream and applying it to a "beneficial use" has a senior water right that carries a priority date based on first use. In time of shortage, earlier or senior users get their water and later or junior users may be entirely cut off. Senior water rights were all based on out-of-stream, consumptive uses, primarily for agricultural irrigation and municipal use. Fish habitat and water quality needs were not considered in the early appropriation of water in the west.

In Oregon it was not until 1987 that instream flows were legally recognized as being a beneficial use of water, with passage of the Instream Water Rights Act. The Act allows private parties to create instream rights by purchasing, leasing or accepting a donation of existing water rights for conversion to instream rights, with the same priority date as the original right. The instream water right is established for a reach of the stream, generally from the original point-of-diversion (POD) to the mouth of the stream. Throughout this reach, the instream flow can be protected from removal by irrigators with junior priority dates. This is different from a situation where a water right holder simply "leaves" their water instream; in that instance, there is no legal protection for the right, and the water will generally be used by the next downstream, junior irrigator. Thus, instream water rights are an important tool for putting legally protected "wet water" back in many of our over-appropriated rivers and streams.

Increased instream flows will help address one of the four "H's" commonly identified as impacting anadromous and resident fish in the Columbia Basin, namely, habitat. Spawning and rearing habitat for salmonids is generally provided by the smaller streams and tributaries of the Columbia River. A water right acquisition program, which uses market-based incentives to achieve environmental goals, is well suited to accomplishing habitat objectives on small streams and tributaries. In these areas, irrigation is generally accomplished by individuals growing hay or pasture. A number of these smaller farmers and ranchers have indicated a willingness to reduce or forgo irrigation in exchange for monetary compensation. The amounts of water that can be

obtained through this process can be very significant in a smaller stream that has very low flow, or is completely de-watered during the irrigation season. The increased instream flow provides both physical habitat and benefits to water quality.

Each of the Oregon subbasins of the Columbia Basin contains important spawning and rearing habitat that is affected by irrigation withdrawal. The Oregon Water Trust, in partnership with the Oregon Water Resources Department (OWRD), the Oregon Department of Fish and Wildlife (ODFW), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) and numerous Watershed Councils has selected a number of candidate streams for water right acquisitions. These selections are based on ecological, hydrological and water right information (see methods).

In the John Day Subbasin, which provides some of the best habitat for wild spring chinook and summer steelhead, there are many streams that are affected by irrigation withdrawal and would benefit from water right acquisitions. Specifically, the Middle Fork John Day River and its tributaries are in relatively good condition and contain large populations of spring chinook and summer steelhead. Many of the tributaries have one or two water rights located at, or near, the mouth, which affects habitat conditions and reduces connectivity between the River and the tributaries. Acquiring these water rights would protect the natural flow of these tributaries and enhance flows in the Middle Fork. Other tributaries that have been identified as potential priority streams include Muddy, Service, Fields and Fox Creek, all of which provide habitat for summer steelhead, and are impacted by low flow conditions due to irrigation withdrawal.

In the Lower Deschutes Subbasin, much of the habitat supporting anadromous salmonids is found on CTWSRO land. The water rights in these systems are under the jurisdiction of the Warm Springs Tribes. Two tributaries that flow through private land and are accessible to anadromous fish are Trout Creek and Buck Hollow Creek. These streams provide important habitat for wild summer steelhead, which are proposed for Endangered Species Act (ESA) listing as Threatened. Juvenile trapping on Trout Creek during 1998 identified 70,000 out-migrants. On both streams flow is a limiting factor and fish could significantly benefit from water right acquisitions. Important resident trout streams that are also affected by irrigation withdrawal include Tygh and Badger creeks in the Lower Deschutes, and Squaw Creek in the Upper Deschutes Subbasin. Tygh and Badger creeks provide summer rearing habitat for White River redband trout, which are isolated from other stocks by White River Falls. Squaw Creek currently provides habitat for redband and bull trout, and is one of two tributaries of the Deschutes River that would be accessible to anadromous fish if passage is accomplished over the Pelton/Round Butte dam complex.

The Fifteenmile Creek Subbasin supports the eastern-most population of wild winter steelhead in the Columbia Basin. There have never been releases of hatchery winter steelhead in the Fifteenmile Creek Subbasin, making this run an important unique wild stock. In addition, trapping in 1998 found 800 spring chinook out-migrants. Fifteenmile Creek is severely over-appropriated, resulting in very low flow conditions

during the summer rearing period. OWT and its partner's have identified a number of water right acquisition opportunities on Fifteenmile Creek and its tributaries.

The Umatilla and Walla Walla Subbasins support wild summer steelhead. In addition, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) have re-introduced chinook salmon into the Umatilla, and are evaluating re-introduction in the Walla Walla. In the Umatilla Subbasin, Birch Creek is the only tributary that supports anadromous fish that is not on Tribal or National Forest land. Low flow has been identified as a limiting factor for wild summer steelhead production on both East and West Birch Creeks. In the Oregon portion of Walla Walla Subbasin, the North Fork of the Walla Walla is identified as an important summer steelhead stream that is impacted by low flows due in large part to irrigation withdrawal.

b. Rationale and significance to Regional Programs

To meet the overall goal of rebuilding salmon and steelhead populations without loss of biological diversity, the Northwest Power Planning Council (NPPC) Fish and Wildlife Program (FWP) enumerates many factors that are to be addressed through program measures. One factor is freshwater habitat loss, which is directly and indirectly affected by water quantity and quality. The FWP recognizes the importance of water quantity and quality as components of watershed habitat objectives (FWP 7.6D), and specifies water right acquisitions as one program measure to accomplish these objectives: "To protect salmon and steelhead in the Columbia River and its tributaries: . . . acquire water rights on a voluntary basis by purchase, gift, or through state or federal funding of water conservation or efficiency improvements that produce water savings." (FWP 7.8G.1). Through water right acquisitions, it is possible to create instream flows that can be protected from removal by junior irrigators throughout the protected reach of the stream. Water right acquisitions provide off-site mitigation for losses to salmon and steelhead in the Columbia Basin.

The issue of inadequate instream flow is also addressed in Return to the River, an analysis of restoration of salmonids in the Columbia River system by the Independent Science Group which states that re-establishment of instream flows in key reaches is an urgent priority for restoration efforts (page 354). Wy-KAN-USH-MI WA-KISH-WIT, The Columbia River Anadromous Fish Restoration Plan of the Nez-Perce, Umatilla, Warm Springs and Yakama Tribes discusses the issue of inadequate streamflows and recommends establishing instream flows to meet the desired range of habitat conditions (Volume I, pages B-11 and B-12).

The fundamental need to increase streamflows is recognized in each of the subbasin planning documents as well as a number of watershed assessments and action plans. Voluntary, market-based acquisitions of water rights is listed in many of these plans as an important measure for achieving these objectives.

John Day Subbasin: John Day River Subbasin Salmon and Steelhead Production Plan, 1990 (pg 47); Wy-KAN-USH-MI WA-KISH-WIT Vol II, 1995 (pg 40).

Deschutes Subbasin: Deschutes River Subbasin Salmon and Steelhead Production Plan, 1990 (pg 20); Wy-KAN-USH-MI WA-KISH-WIT Vol II, 1995 (pg 38); Draft Lower Deschutes River Subbasin fish Management Plan, 1996 (pg 1:69); Buck Hollow Watershed Plan and Environmental Assessment, 1994 (pg 18); Upper Deschutes River Subbasin Fish Management Plan, 1990 (pg 74); Squaw (Why-chus) Creek Watershed Assessment, 1994 (pg 38).

Fifteenmile Subbasin: Fifteenmile Creek Subbasin Salmon and Steelhead Production Plan, 1990. (pg 16); Wy-KAN-USH-MI WA-KISH-WIT Vol II, 1995 (pg 34-35); Fifteenmile Watershed Enhancement Action Plan, 1997 (pg 7,9,17); Fifteenmile Basin Fish Habitat Improvement Implementation Plan, 1987 (pg 7,14).

Umatilla Subbasin: Umatilla River Subbasin Salmon and Steelhead Production Plan, 1990 (pg 32,68); Wy-KAN-USH-MI WA-KISH-WIT Vol II, 1995 (pg 44).

Walla Walla Subbasin: Walla Walla River Subbasin Salmon and Steelhead Production Plan, 1990 (pg 23,24,69); Watershed Assessment Upper Walla Walla River Subbasin, 1997 (pg 7); Walla Walla Basin Council Brochure, 1998.

c. Relationships to other projects

There are a number of ongoing projects in each subbasin that will benefit from increased instream flows. In the John Day Subbasin BPA project #8402100 provides long term protection, maintenance and restoration of fish habitat on private lands through implementation of riparian fencing and planting, instream structures and streamback stabilization. Increasing instream flows through water right acquisitions will complement this project by adding additional physical habitat as well as providing streamflow that will help re-establish riparian vegetation. Increasing instream flows fits well into the watershed approach that is being implemented under projects such as the Oregon Fish Screening Project (#9306600) and the John Day Restoration Project (#9137) which are increasing streamflows using irrigation efficiency measures, and improving water quality through streambank and riparian area protection. Project #9144 will help OWT and its partners in our monitoring efforts by providing annual estimates of spring chinook spawner escapement, age-structure, and smolt-to-adult survival.

In the Deschutes Subbasin there are several projects in Trout Creek that are designed to consolidate irrigation diversions and eliminate push up dams (project #9003-9006). Water right acquisitions in Trout Creek would complement these projects by providing streamflows in those areas where passage barriers are being eliminated. Increased instream flows would also complement riparian restoration and habitat improvements implemented under projects #9494200 and #9005. The Buck Hollow Watershed Enhancement Project (#9303000) is a comprehensive project to restore water

quality and fish habitat. This project would directly benefit from acquisition of the one active water right in Buck Hollow Creek, which would provide a legally protectable flow of 1 cfs at the mouth of Buck Hollow.

In the Fifteenmile Creek Subbasin, project #9304000 is a cooperative effort among ODFW, CTWSRO, the U.S. Forest Service and the Wasco County Soil and Water Conservation District. The project is designed to improve passage conditions for both juvenile and adult fish, improve spawning and rearing habitat and increase egg-to-smolt survival rates. The results have been significant improvement in riparian vegetative growth, better summer rearing habitat and decreased mortality of anadromous fish at diversion structures. These efforts will be greatly enhanced by increases in instream flows. In addition, project #9087 will fund purchase of an 1860 water right by OWT, which will be converted to a permanent instream water right.

Both the Umatilla and Walla Walla Subbasins have ongoing stream and riparian habitat improvement projects (Uma #8710001 and #8710002; Walla Walla #9604601) that will benefit from increased instream flows. Both basins have projects addressing passage improvement (Uma #8343600 and #802200; Walla Walla #9601100 and #9601200). In addition, there are several monitoring projects in the Umatilla Subbasin (#8902401 and #9000501) that will provide information that OWT can use in evaluating the success of its project.

d. Project history (for ongoing projects)

This is a new project.

e. Proposal objectives

The objectives of this Program are to improve the quantity and quality of habitat for anadromous and resident fish by acquiring consumptive water rights for conversion to instream use in stream reaches crucial for spawning, rearing and migration. In each subbasin, OWT and its partners have identified candidate or target streams, and have set goals for acquiring instream water rights during the three year period. The goals are not ultimate targets for these streams, but rather represent a start toward streamflow recovery that can be reasonably accomplished over the three year period of the grant. The total amount of water identified for acquisition is more than can be acquired with the total funding requested, recognizing that some acquisitions may not occur during the three year period. OWT expects to acquire a total of 12 cfs at a cost of \$600,000.

Cost/value of the water rights were based on an average water right rate of 1/50 cfs per acre of irrigated land, which is a standard amount allocated for many past water right purchases. The expected price for water right acquisitions is about \$1,000 per acre, which represents the difference in the market value of the property with and without a water right. Using a duty of 3 acre foot/acre, a standard duty in many Oregon streams, the resulting purchase price is \$333 per acre-foot. This is slightly below the average price paid for general water right transactions in Oregon, as documented in Landry, 1995.

John Day Subbasin

Objective 1 - Tributaries of the Middle Fork John Day, including Big, Camp, Vincent, Davis, Vinegar, Bridge Creeks: These streams support significant populations of wild spring chinook and summer steelhead. Each tributary has one or two water rights under one ownership. Current irrigation practices affect rearing habitat and eliminate connectivity between tributaries and the mainstem Middle Fork. OWT has instream leases on 3 other Middle Fork tributaries. Acquire 2 cfs total from 2-3 landowners; \$100,000.

Objective 2 - Muddy Creek: Supports summer steelhead and redband trout. Under one ownership. Acquire at least 1.5 of the 3.1 cfs total water right; \$75,000.

Objective 3 - Service Creek: Supports summer steelhead and redband trout. Acquire one of two active rights. 0.2 cfs; \$10,000.

Objective 4 - Fields/Fox Creeks: Support summer steelhead, redband and cutthroat trout. Review streamflow, habitat and water rights information and identify potential landowners. Send letters and hold public meetings to cultivate acquisition opportunities (see methods).

Deschutes Subbasin

Objective 5 - Buck Hollow Creek: One of few tributaries on the east-side of Deschutes Subbasin accessible to anadromous fish. Critical summer steelhead habitat. One water right holder. OWT has leased this water right in past years. Permanently acquire entire 1 cfs; \$ 50,000.

Objective 6 - Trout Creek: Largest tributary on east-side of Deschutes Subbasin accessible to anadromous fish. Critical summer steelhead habitat. 1998 smolt trapping found 70,000 out-migrants. Severe low-flow conditions in late summer due to extensive irrigation withdrawal; impacts rearing habitat and water quality. ODFW has identified a *minimum* flow need of 13 cfs in Upper Trout and 25 cfs in Lower Trout. Acquire 1.5 cfs from 2-3 landowners; \$75,000.

Objective 7 - Tygh/Badger Creeks: Tributary of White River. Supports isolated population of redband trout. ODFW *minimum* flow is 8 cfs for Tygh and 12 cfs for Badger. OWT currently leases approximately 1.25 cfs on Tygh Creek, some or all of which might be converted to permanent acquisitions. Permanently acquire 0.5 cfs from 1 or 2 landowners; \$25,000.

Objective 8 - Squaw Creek: Currently supports redband and bull trout. If passage is accomplished over Pelton/Round Butte dams, Squaw Creek will be one of two tributaries above the dams accessible to chinook and steelhead. There are a number of landowners with small water rights. OWT has recently purchased

1.6 cfs and has almost 1.5 cfs in instream leases, which could be potentially converted to permanent acquisitions. Permanently acquire an additional 2.5 cfs from 5 landowners; \$125,000.

Fifteenmile Subbasin

Objective 9 - Fifteenmile and Eightmile Creeks: Easternmost run of wild winter steelhead. 1998 smolt trapping found 800 chinook migrants. ODFW recommended *minimum* flow is 13 cfs in July and August and 4 cfs for September and October. OWT currently has 3.9 cfs in instream leases and will be permanently acquiring 0.23 cfs in 1999 (BPA project #9087). Some of the leases could potentially be converted to permanent acquisitions. Permanently acquire an additional 2 cfs from 3 landowners; \$100,000.

Umatilla Subbasin

Objective 10 - East and West Birch Creeks: Only anadromous tributaries to the Umatilla River that is not on Tribal or National Forest Land. Severely affected by irrigation withdrawal. Acquire 1 cfs from 2 landowners; \$50,000.

Walla Walla Subbasin

Objective 11 - North Fork Walla Walla: Only tributary to the Walla Walla in Oregon with significant low flow problems due to irrigation withdrawal. ODFW recommended *minimum* flow is 15 cfs. Acquire 0.5 cfs from 1 landowner; \$25,000.

Throughout Oregon portion of Columbia Basin

Objective 12 - New priority streams: Identify potential new priority streams, evaluate ecological and hydrological conditions and target water right acquisitions on 2 to 4 new streams (see methods). Acquire a total of 1 cfs from new priority streams; \$50,000.

Objective 13 - Other streams with flow limitations: Accomplish basinwide understanding of and interest in water right acquisition program to generate opportunities from non-target streams (see methods). Acquire a total of 1 cfs from non-target streams; \$50,000.

f. Methods

This project will benefit from a multi-year funding cycle since water right acquisitions often require several years to identify, cultivate and complete. For example, OWT first contacted the landowner involved in BPA project #9087 in November of 1996. After numerous phone calls and several visits, OWT and the landowner reached a verbal

sales agreement in late-1997 and signed a written purchase agreement in late-1998. OWT is now proceeding with the transfer application to convert the irrigation right to a permanent instream water right.

A multi-year project will provide time for OWT to contact potential sellers, negotiate deals, and monitor and evaluate acquisitions on our existing priority streams. In addition, a multi-year cycle will allow OWT and its partners to identify several new priority streams and begin cultivating and developing new acquisition opportunities. Most importantly, a multi-year project will provide time for OWT and potential willing sellers to negotiate an agreement acceptable to both parties.

OWT has developed specialized expertise in acquiring water rights for instream use based on activities conducted since 1994. OWT uses a systematic, science-based methodology to insure that each acquisition has the potential to provide significant ecological benefits to threatened salmon, steelhead and resident fish runs and contribute to habitat restoration efforts in the subbasins. The methodology is based on analytical techniques described in a variety of watershed analysis manuals (Washington Watershed Analysis manual), state flow restoration processes (ODFW/OWRD) and instream flow models (IFIM).

Identifying and Prioritizing (Task a): OWT and its partners have already identified a number of target streams and have established acquisition goals for each stream. Targeting focused on streams where flow is a limiting factor for fish and there is potential for acquiring water rights to convert to instream flows. OWT and its partners will also identify 2 to 4 new priority streams during the three year period of the grant, and will be conducting outreach to identify acquisition opportunities. Information used in identifying priority streams includes:

- ◆ fish distribution and use (spawning, rearing, etc.);
- ◆ historical and current status of the fish (productivity, ESA listings, etc.);
- ◆ habitat needs of fish
- ◆ current and historic instream conditions (habitat, water quality)
- ◆ current water availability situation
- ◆ other limiting factors that would limit recovery
- ◆ amount, location and priority dates of water rights
- ◆ relation of instream conditions to riparian, upslope and watershed conditions and activities

Evaluating Acquisition Opportunities (Task b): The project will consider environmental and economic factors to determine the potential ecological benefits and economic value of each water right acquisition opportunity. Analysis of water right acquisitions includes: fish and water quality needs, amount of flow, date of seniority, point of diversion, place of use, reach of stream for which instream right is protectible, and relationship of the water right to other water rights in the stream segment. To determine economic value of the water right, OWT will consider the past and current irrigation activities of the landowner, forgone expenses versus forgone costs, and property values with and without a water right.

Negotiating and Transferring Water Rights (Task c): For each suitable acquisition opportunity, OWT staff negotiates agreement terms with willing water rights holders, and coordinates efforts with watershed councils, government agencies, and other interested parties. There are two processes involved in completing a water right acquisition. First, a private agreement is negotiated between OWT and the water right holder. Second, OWT applies to the Oregon Water Resources Department for approval of a transfer of the water right to instream use. As stated in the Objectives, OWT currently has a number of instream leases that could potentially be converted to permanent acquisitions. In addition, OWT has a number of potential deals under consideration (ranging from preliminary inquiries to nearly completed negotiations).

Public Education and Outreach (Task d): OWT will carry out an ongoing public education and outreach program to generate interest in water right transfers and leases. Outreach will focus on two different audiences; (1) water rights holders on targeted streams and (2) water right holders on non-targeted streams, and basinwide organizations, including water user groups, and state and federal natural resource agencies. On target streams, OWT and its partners will send letters to selected water right holders informing them of the economic and ecological benefits of converting their water rights to instream use. OWT will then follow-up with these landowners through phone calls and local meetings. OWT will work closely with the appropriate watershed councils and Soil and Water Conservation districts to set up individual and group meetings. Basinwide outreach will include mailings to agencies and user groups, presentations at regularly scheduled meetings, and phone calls and visits with agency and organization staff.

Instream Water Right Monitoring and Protection (Task e): OWT staff will work with Water Resources Department watermasters and others to develop an appropriate plan for monitoring and protecting the instream water rights. Each instream water right will be reviewed considering the amount and location of the instream right, the location and priority date of remaining irrigation rights, and the current monitoring regime, including permanent gaging stations and staff gages, and periodic streamflow measurements. Where current flow monitoring is adequate, OWT will obtain flow data on a regular basis and verify that the instream water right is being met. Where current flow monitoring is not adequate, OWT will conduct field visits and will measure flow using a Marsh-McBirney current meter. Where instream water rights are not being met, OWT will work with the watermasters to enforce irrigation water rights so that the instream water right is protected throughout the designated reach.

Monitoring and Evaluating Success (Task f): One measurement of success is the number of acquisitions made, and a second measure is the conservation impact of the acquisitions. OWT will use the following parameters to determine the overall conservation impact of each water right acquisition:

- ◆ miles of stream, or the reach, for which the flow is protectible (generally from the previous point of diversion to the mouth of the stream);

- ◆ relative priority date (senior rights transferred to instream use are protectible against junior rights in the defined reach, meaning that instream flows are more likely to be maintained during low flow periods);
- ◆ rate of flow of water (cubic feet per second or gallons per minute) relative to existing flow conditions;
- ◆ period of use (often limited to the irrigation season);
- ◆ anadromous and resident species present in the system, and status of species as sensitive or threatened;
- ◆ use of the system in general and protected reach in particular for migration, spawning, incubation, rearing and/or feeding; and
- ◆ potential that increased water quantity will improve habitat, and water quality.
- ◆ potential benefit of enhanced streamflows on other habitat restoration activities

Measurements of ecological success reflecting improvement in overall habitat condition include stream system flow parameters (width, depth and velocity), water quality, and condition of spawning, rearing and migration habitat. OWT will work with state, federal and tribal agency staff to identify opportunities for cooperative monitoring projects that will provide more detailed information on current conditions and trends in habitat and water quality.

Potential Limiting Factors: The main factor that might limit the success of the project is landowners reluctance to sell their water rights. OWT has been addressing this issue for 5 years, and has seen a steady increase in interest. In 1994, OWT had 4 water right acquisitions; four years later in 1998, OWT had 31 acquisitions. However, on several of the streams that have been identified in this proposal there has been minimal landowner interest to date, and it may be challenging to permanently acquire water rights during the next few years. This knowledge led us to identify more water rights for acquisition than we would have funding to complete under this project.

Another factor that has the potential to limit the success of the project is lack of enforcement of the instream water rights. On many streams there are a number of irrigators along the instream reach, and there a potential for the instream water right to be removed by junior water right holders. OWT considers measuring and monitoring a critical component of the project. Our monitoring program includes on-site streamflow measurements as needed, and extensive contact and involvement with the OWRD watermasters. Protecting instream flows is also a priority for the state, as delineated in the Oregon Plan for Salmon and Watersheds. Commitment by the state has increased as more permanent instream water rights have been acquired. OWRD has worked closely with OWT to provide long-term monitoring for permanent acquisitions, including installation of weirs, flumes and staff gages that are calibrated to measure streamflow at critical points along the instream reaches.

g. Facilities and equipment

OWT owns a Marsh-McBirney flow meter for measuring streamflow. This state-of-the-art equipment is highly accurate for measuring low flow conditions. OWT also has a number of Onset brand temperature recorders for measuring stream temperature if needed for evaluating ecological benefit. OWT's office is fully equipped with computers and software necessary for processing water right transfer applications and compiling, analyzing and displaying monitoring data.

h. Budget

Total Budget

The total budget for the three-year project is \$765,000. Of this total, \$600,000 is budgeted for acquisitions, \$150,000 for OWT operations, and \$15,000 for agency cost share. OWT is requesting a total of \$500,000 from BPA over the three-year period (\$130,000 in 2000, \$167,000 in 2001 and \$203,000 in 2002). This amount is two-thirds of the total budget (excluding the agency cost share) and is comprised of \$400,000 in acquisition funds and \$100,000 in operational funds. The entire project will cost \$200,000 in 2000, \$255,000 in 2001 and \$310,000 in 2002. The annual budget increases reflect both a slight increase in operational costs and an anticipated increase in the quantity of acquisitions between FY 2000 and FY 2002.

Cost Sharing

OWT anticipates that the National Fish and Wildlife Foundation will support some of our acquisitions and operations over the three-year period. We expect that The Bullitt Foundation and The Compton Foundation will support the remainder of our operations. OWT expects that the Oregon Water Resources Department and Oregon Department of Fish and Wildlife will donate between 10 and 12 days of expertise each year over the project period (Between \$2,000-\$3,000 from each department/year). OWT anticipates that the Governor's Watershed Enhancement Board, Portland General Electric, local governments and individual and corporate donors will support cost sharing for our water right acquisition program.

Section 9. Key personnel

Andrew Purkey (Executive Director): Andrew Purkey is the first executive director of the Oregon Water Trust. He has been in this position since January 1, 1994. Andrew grew up in Eugene and graduated from the University of Oregon. He worked in both the Oregon State Legislature and the United States Congress before attending Harvard University's Kennedy School of Government. He earned a master's degree, with a concentration in natural resources policy, from the Kennedy School. Prior to returning to Oregon, Andrew worked for a Washington, D.C.-based environmental consulting firm for three years and with The Nature Conservancy for two years.

Dr. Leslie Bach (Associate Director of Science): Dr. Bach holds a Ph.D. in Hydrology and Water Resources from Colorado State University, an M.S. in Hydrology and Soil Physics from New Mexico State University and a B.S. in Soil and Water Science from the University of California at Davis. She spent 7 years with the U.S.D.A.-Agricultural Research Service conducting field and laboratory research on relationships among rainfall, runoff, soil erosion and sediment delivery to streams. Subsequently she spent two years with the U.S.D.A.-Forest Service as the Forest Hydrologist on the Umatilla National Forest in Eastern Oregon. There she evaluated impacts of forest management on anadromous and resident salmonids and developed a watershed management program designed to protect stream and riparian conditions. Before coming to the Oregon Water Trust, Leslie was the Watershed Assessment coordinator for the Oregon Department of Environmental Quality. There she worked with local watershed councils and state and federal agency personnel to collect, compile and analyze stream, riparian and upland data and develop watershed assessments that defined resource conditions, current and potential impacts to anadromous and resident fish populations, and protection and restoration opportunities.

Cheyenne Chapman (Associate Director of Communications and Development): Cheyenne Chapman joined the OWT staff in May 1998 to fill a new position dedicated to the dual functions of public outreach and resource development. She holds degrees from the University of Colorado College of Environmental Design, the University of Oregon School of Law, and the Northwestern School of Law of Lewis and Clark College Masters of Law Program in Environmental and Natural Resources. She has experience working as a planner, administrator and attorney with state and local governments, and has experience with nonprofit organizations and foundations in the areas of planning, resource development, and program implementation.

Emile Hall (Staff Assistant) will provide administrative support for Project activities. Emile started work with OWT in June 1998, having previously worked as an office administrator. She holds a B.A. in Environmental Biology from the University of Colorado, and has volunteer experience with the Oregon Department of Fish and Wildlife researching instream flow issues.

Section 10. Information/technology transfer

OWT conducts an ongoing public education and outreach program designed to reach both water right holders on priority streams, and a broader audience of water right holders on other streams, basinwide organizations and resource agencies. OWT makes personal contacts with water right holders through letters and phone calls, and also makes presentations to watershed councils, SWCDs and other local groups.

OWT prepares media releases and contacts local and statewide media regarding outreach activities and water right acquisitions, using broadcast fax, followup calls and

press conferences to provide information. OWT also distributes information in printed form and on-line through our website at www.owt.org.

OWT has full spreadsheet, database and Geographical Information Systems capabilities. Data compiled or collected through this project will be shared with local agencies and watershed councils as raw data, summarized statistics, graphs and GIS maps.

Congratulations!